
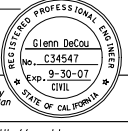


| | | | | | |
|------|--------|-------|-----------------------------|--------------|-----------------|
| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
| | | | | | |


 REGISTERED CIVIL ENGINEER
 No. C34547
 May 1, 2006
 PLANS APPROVAL DATE
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POSITIVE JOINTS

| | | | | | | | | BAR AND STRAP (CSP ONLY) | | | | ANGLE | | | | | | |
|------------------|-------------------------------|--------------|---------|---------------------|-----|----------------|-----|-----------------------------|--------------|---------|-----------------------|-------------------------|-----|--------------------|-----|-------------------------|--------|-----------------------------|
| COUPLING TYPE | PIPE CORRUPTION | PIPE SIZE | W OR A | PIPE WALL THICKNESS | | BAND THICKNESS | | STRAP THICKNESS | BOLTS Dia | BAR Dia | BAR YIELD STRENGTH | DIMENSIONS | | BOLTS (No.-Dia) | | RIVETS ANGLE TO BAND | | SPOT WELDS ANGLE TO BAND |
| | | | | CSP | CAP | CSP | CAP | | | | | CSP | CAP | CSP | CAP | CSP | CAP | |
| HUGGER | 2 2/3" x 1/2" REROLLED END | THROUGH 48" | 10 1/2" | 0.109" | | 0.064" | | 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | 54" - 66" | 10 1/2" | 0.109" | | 0.064" | | DOUBLE 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | THROUGH 54" | 10 1/2" | 0.064"-0.079" | | 0.064" | | 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | THROUGH 60" | 10 1/2" | 0.138" | | 0.079" | | DOUBLE 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | 66"-72" | 10 1/2" | 0.138" | | 0.109" | | DOUBLE 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | THROUGH 72" | 10 1/2" | 0.168" | | 0.109" | | DOUBLE 0.109" | 1/2" | 7/8" | 45 ksi | | | | | | | |
| | 3" x 1" REROLLED END | 48"-84" | 10 1/2" | 0.109" | | 0.079" | | DOUBLE 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | 48"-90" | 10 1/2" | 0.064"-0.079" | | 0.064" | | DOUBLE 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | 96"-102" | 10 1/2" | 0.079" | | 0.079" | | DOUBLE 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | 90"-120" | 10 1/2" | 0.109" | | 0.109" | | DOUBLE 0.109" | 1/2" | 7/8" | 45 ksi | | | | | | | |
| HAT BAND | 2 2/3" x 1/2" REROLLED END | 12"-30" | 2 3/4" | 0.064"-0.079" | | 0.064" | | | | | | 2 1/2" x 1 1/2" x 3/16" | | 1-1/2" | | | 3-1/2" | |
| | | 36"-48" | 2 3/4" | 0.064" | | 0.064" | | | | | | 2 1/2" x 1 1/2" x 3/16" | | 1-1/2" | | 3-1/2" | 3-1/2" | |
| | | 36"-48" | 2 3/4" | 0.079" | | 0.079" | | 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | THROUGH 42" | 2 3/4" | 0.109" | | 0.079" | | 0.079" | 1/2" | 7/8" | 32 ksi | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

DOWNDRAIN

| | | | | | | | | BAR AND STRAP (CSP ONLY) | | | ANGLE | | | | | | |
|---------------------------------|--------------------------|--------------|--------|---------------------|---------------|----------------|--------|-----------------------------|--------------|---------|--------------|--------------|--------------------|------|-------------------------|------|-----------------------------|
| COUPLING TYPE | PIPE CORRUGATION | PIPE SIZE | W OR A | PIPE WALL THICKNESS | | BAND THICKNESS | | STRAP THICKNESS | BOLTS Dia | BAR Dia | DIMENSIONS | | BOLTS (No.-Dia) | | RIVETS ANGLE TO BAND | | SPOT WELDS ANGLE TO BAND |
| | | | | CSP | CAP | CSP | CAP | | | | CSP | CAP | CSP | CAP | CSP | CAP | |
| TWO PIECE INTEGRAL FLANGE | 1½" x ¼" | 6" | 7" | 0.064"-0.168" | | 0.052" | | | | | | | | 3-¾" | | | |
| | 1½" x ¼" | 8"-10" | 7" | 0.064"-0.168" | 0.060"-0.164" | 0.064" | 0.060" | | | | | | | 3-¾" | 3-¾" | | |
| ANNULAR | 2⅔" x ½" | THROUGH 24" | 12" | 0.064"-0.168" | 0.060"-0.164" | 0.064" | 0.060" | | | | 2" x 2" x ⅜" | 2" x 2" x ⅜" | 3-½" | 3-½" | 3-⅜" | 3-⅜" | 3-½" |
| HUGGER | 2⅔" x ½" REROLLED END | THROUGH 24" | 10½" | 0.064"-0.168" | | 0.064" | | 0.079" | ½" | ⅞" | | | | | | | |

NOTES:

- All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
- Tension straps may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- Use 1/4" gage line dimension on attached angle leg for rivets and spot welds.
- Band thickness shall not be less than:
 - 3 standard thickness lighter than the thickness of the pipe for corrugated steel pipe.
 - 2 standard thickness lighter than the thickness of the pipe and in no case lighter than 0.060" for corrugated aluminum pipe.
- Dimensions, thickness and strengths shown are minimum.
- For pipe arches use same width band as for round pipe of equal periphery.
- Fillet welds of equivalent strength may be substituted for spot welds or rivets.
- Spot welds shall develop minimum required strength of strap.
- Pipe with rerolled ends having at least two 2 $\frac{2}{3}$ " x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 $\frac{2}{3}$ " x 1/2" corrugations.
- Two piece bands are required for pipes greater than 42" diameter.
- For down drain applications, two piece integral flange couplers shall have factory applied sleeve type rubber gaskets with a minimum length pf 7" measured along the length of the pipe.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CORRUGATED METAL PIPE
COUPLING DETAILS No. 7
POSITIVE JOINTS AND
DOWNDRAIN**

NO SCALE

D97G